

Appl. No. 10/675,049 Amdt. dated 5/15/06
Reply to Office action of February 16, 2006

REMARKS

Reconsideration of the application is requested.

Claims 1-13 and 15-22 are now in the application. Claims 13 and 15-20 are subject to examination and claims 1-12 and 21-22 have been withdrawn from examination. Claims 1 and 13 have been amended. Claims 18-22 have been added. Claim 14 has been canceled.

In "Specification" on page 3 of the above-identified Office Action, the Examiner objected to the title and the Abstract as not being indicative of the invention to which the claims are directed. The Examiner has mentioned that the claims are directed to a furnace and presumably refers to the fact that the method claims are non-elected. However, as mentioned previously, if a device claim is eventually allowed and a method claim contains the limitations of an allowed device claim, rejoinder of the method claim is required by MPEP 821.04. It therefore makes no sense to remove reference to the method from the title and the Abstract at this time. Rejoinder of the method claims under MPEP §821.04 are accordingly once more requested.

However, cosmetic changes have been made to the Abstract.

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In "Claim Rejections - 35 USC § 102" on pages 4 and 5 of the Office Action, claims 13-15 have been rejected as being fully anticipated by U.S. Patent No. 5,484,484 to Yamaga et al. (hereinafter Yamaga) under 35 U.S.C. § 102(b).

In "Claim Rejections - 35 USC § 103" on pages 5 and 6 of the Office Action, claims 16 and 17 have been rejected as being obvious over Yamaga in view of the Examiner's remarks under 35 U.S.C. § 103(a).

The rejections have been noted and the claims have been amended in an effort to even more clearly define the invention of the instant application.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful. Claim 13 calls for, *inter alia*, a furnace for vapor phase depositing components contained in a process gas onto a plurality of semiconductor substrates, the furnace comprising:

a process space for receiving the semiconductor substrates disposed one above another at a short distance to form a stack, said process space having a top side and a bottom side;

a first feed/discharge line connected to said process space at said bottom side;

a second feed/discharge line connected to said process space at said top side;

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a device for producing a process gas flow, said device for producing said process gas flow connected to said first feed/discharge line and/or said second feed/discharge line causing the process gas to flow laterally past the stack defining a main flow direction;

a heating device; and

a regulating unit for regulating a magnitude of said process gas flow and for changing the main flow direction by 180° while continuing to flow laterally past the stack.

Independent withdrawn method claim 1 calls for, inter alia, a method for vapor phase deposition, which comprises:

providing a process space having a top side and a bottom side;

vapor phase depositing components contained in a process gas flowing along a main flow direction between the sides of the process space laterally past and onto a plurality of semiconductor substrates disposed one above another at a short distance to form a stack in the process space;
and

during the step of vapor phase depositing, changing the main flow direction by 180° at least once while continuing flowing laterally past the stack.

Thus, both device claim 13 and non-elected method claim 1 call for the process space having top and bottom sides and the main flow occurring between those sides.

Furthermore, new dependent device claims 18 and 19 respectively call for the process gas flow being unobstructed in the process space and the process space having no obstructions or guides therein for the process gas flow.

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Similarly, new dependent method 21 claim calls for guiding the process gas in the main flow direction without guides or obstructions in the process space.

New dependent device claim 20 states that the regulating unit causes the main flow direction of the process gas flow to be unidirectional within the process space. Similarly, new method claim 22 states that the main flow direction of the process gas within the process space is unidirectional.

Support for the changes in claims 1 and 13 and for new claims 18-22 can be found on pages 26-30 of the Specification of the instant application. More specifically, page 14, lines 17-18 and page 23, line 10 call for undersides and top sides of the process space.

Support for the process space being unobstructed and having no guides can be seen by the open process space 3 in Fig. 1.

Support for the main flow direction being unidirectional can be found in the description of Fig. 1 stating that the flow is either only from line 7 to line 12 or vice versa.

In contrast to claims 1 and 13 of the instant application, Figs. 3A and 3B of the Yamaga reference teach that all of the supply and exhaust pipes 4-7 are disposed at the bottom side

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of the furnace.

) In contrast to claims 18 - 22 of the instant application, Figs. 3A and 3B of the Yamaga reference teach that an inner tube 2a is provided within an outer tube 2b so that wall portions obstruct or guide the process gas flow and reverse the process gas flow as indicated by the arrows after being deflected at the upper part of the furnace.

Not only are the structure and method of the claims of the instant application not found in the prior art, but in addition the placement of the lines at the top and bottom and the unidirectional flow of the furnace and method of the present invention without obstructions or guides, are less expensive to produce and result in less wear.

Clearly, Yamaga does not show or suggest:

a process space having top and bottom sides and a main flow occurring between those sides as recited in claims 1 and 13; nor

the process gas flow being unobstructed in the process space and the process space having no obstructions or guides therein for the process gas flow as recited in claims 18, 19 and 21; nor

) the main flow direction of the process gas flow being unidirectional within the process space as recited in claims 20 and 22;

of the instant application.

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) It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claims 1, 13 and 18-22. Claims 1, 13 and 18-22 are, therefore, believed to be patentable over the art. The other dependent claims are believed to be patentable as well because they all are ultimately dependent on claim 1 or 13.

In view of the foregoing, reconsideration, rejoinder and allowance of claims 1-13 and 15-22 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate receiving a telephone call so that, if possible, patentable language can be worked out.

If an extension of time is required, petition for extension is herewith made. Any extension fee associated therewith should be charged to the Deposit Account of Lerner Greenberg, Stemer LLP, No. 12-1099.

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Twenty-one claims are now present in the application. The fee of \$50.00 for one additional dependent claim in excess of twenty is enclosed.

Please charge any other fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner Greenberg Stemer LLP, No. 12-1099.

Respectfully submitted,



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LAG/am

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